

Recovery Plan Action Status

Plan Name: Recovery Plan for the Quino Checkerspot Butterfly (*Euphydryas editha quino*)

Plan Status: Final

Plan Date: 17-Sep-03

Lead Agency: USFWS

Lead Office: Carlsbad Fish And Wildlife Office

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431-9440)

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
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Quino checkerspot butterfly (<i>Euphydryas editha quino</i> (=E. e. wrighti))	1	1.1	Northwest Riverside Recovery Unit: Protect and manage as much as possible of the habitat that is part of the known historic Gavilan Hills/Lake Mathews population distribution and associated with the Canyon Lake Occurrence Complex, in a configuration designed to support a resilient metapopulation. Develop a Quino checkerspot butterfly management plan for the Lake Mathews / Estelle Mountain Preserve.	Ongoing Not Current			Lake Mathews/Estelle Mountain Reserve Management Committee, Riverside County, California, USA Waste Incorporated, City of Lake Elsinore, California, City of Canyon Lake, California, City of Perris, California, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, Non-governmental organizations	Acquisition: General, Management: Habitat Maintenance and Manipulation, Management: Identify/Protect Foraging, Breeding and Mig Habitats, Management: Land Use, Management: Planning, Other: Law Enforcement, Research: Climate Change, Research: Habitat Requirements	Contract, Graduate Student, Internal Administrative, Internal Technical Assistance, Species Expert	This action status was "obsolete" last year because of lack of conservation and habitat loss in the eastern portion of the unit (near and including Harford Springs Park) where most historic records were, and the paucity of planned habitat conservation connecting the northern habitat areas to the "Canyon Lake Occurrence Complex," and in the complex itself. We reevaluated our action status because much conservation has occurred in the Lake Mathews / Estelle Mountain Preserve, and conservation, management, and planning are ongoing. This action needs to be updated, in particular the remaining habitat should be evaluated to determine if the preserve provides a configuration capable of supporting a resilient metapopulation. Given the recent positive population trend information for Quino in some portions of the species range (5 year review and 2010 survey info), and ongoing conservation actions, we feel the status should be "ongoing- not current."

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Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	1	1.2	Southwest Riverside Recovery Unit: Protect and manage as much of the remaining habitat as possible that is part of the known population distributions, in a configuration designed to support resilient metapopulations. Develop a Quino checkerspot butterfly management plan for Southwest Riverside County Multiple Species Reserve (Lake Skinner) and an additional reserve in the vicinity of Warm Springs Creek. Preserve as much natural area as possible in the French Valley between occurrence complexes.	Ongoing Current	FY 2000 - FY 2004		Riverside County, California, University of California at Riverside, City of Murrietta, California, City of Temecula, California, Western Riverside County Multiple Species Reserve Management Committee, U.S. Fish and Wildlife Service, California Department of Fish and Game, Non-governmental organizations	Acquisition: General, Management: Habitat Maintenance and Manipulation, Management: Identify/Protect Foraging, Breeding and Mig Habitats, Management: Land Use, Management: Planning, Management: Population Monitoring, Other: Law Enforcement, Research: Climate Change, Research: Management Techniques, Research: Population Assessment, Research: Population Surveys	Contract, Internal Administrative, Internal Technical Assistance	
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	1	1.3	South Riverside Recovery Unit: Protect and manage as much as possible of the remaining habitat within the between the occurrence complexes, in a configuration designed to support resilient metapopulations.	Ongoing Current	FY 2000 - FY 2004		Riverside County, California, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, Cleveland National Forest, Non-governmental organizations	Acquisition: General, Management: Habitat Maintenance and Manipulation, Management: Identify/Protect Foraging, Breeding and Mig Habitats, Management: Land Use, Management: Planning, Management: Population Monitoring, Other: Law Enforcement, Research: Climate Change, Research: Management Techniques, Research: Population Assessment, Research: Population Surveys	Contract, Internal Administrative, Internal Technical Assistance	

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Quino checkerspot butterfly (<i>Euphydryas editha quino</i> (=E. e. wrighti))	1	1.4	South Riverside / North San Diego Recovery Unit: Protect and manage as much as possible of the remaining habitat within and between the occurrence complexes, in a configuration designed to support resilient metapopulations.	Ongoing Current	FY 2000 - FY 2004		Riverside County, California, San Diego County, California, Cahuilla Band of Indians, Alpha USA, Inc., Pepperdine University, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, San Bernardino National Forest, Non-governmental organizations	Acquisition: General, Management: Habitat Maintenance and Manipulation, Management: Identify/Protect Foraging, Breeding and Mig Habitats, Management: Land Use, Management: Planning, Management: Population Monitoring, Other: Administration, Other: Information and Education, Other: Law Enforcement, Other: Regulations, Research: Climate Change, Research: Management Techniques, Research: Population Assessment, Research: Population Surveys	Contract, Internal Administrative, Internal Technical Assistance	Per revised critical habitat rule and recent 5 year-status review, much privately owned land that is needed for recovery in this unit is not conserved, planned for conservation, or otherwise protected by regulations. Significant portions of habitat associated with the "Bautista Habitat-based Occurrence Complex" are permitted for development (and the species is permitted for take) under the HCP. Additional education and regulation is needed to protect these areas and ensure recovery. HCP being developed for Central/north San Diego County.
Quino checkerspot butterfly (<i>Euphydryas editha quino</i> (=E. e. wrighti))	1	1.5	Southwest San Diego Recovery Unit: Protect and manage as much as possible of the remaining habitat within and between the occurrence complexes, in a configuration designed to support resilient metapopulations. Specifically, surrounding Otay Mountain, east through Tecate Peak, and north through Proctor Valley.	Ongoing Current	FY 2000 - FY 2004		City of Chula Vista, California, City of San Diego, California, San Diego County, California, U.S. Bureau of Customs and Border Protection, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, California Department of Fish and Game, California Department of Forestry and Fire Protection, Non-governmental organizations	Acquisition: General, Management: Habitat Maintenance and Manipulation, Management: Land Use, Management: Planning, Management: Population Monitoring, Other: Law Enforcement, Research: Management Techniques, Research: Population Surveys	Contract, Internal Administrative, Internal Technical Assistance	

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Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	1	1.6	Southeast San Diego Recovery Unit: Protect and manage as much as possible of the remaining undeveloped suitable and restorable habitat patches and dispersal areas within the recovery unit, especially south of Interstate 8.	Ongoing Not Current	FY 2000 - FY 2004		San Diego County, California, Anza Borrego Desert State Park, U.S. Bureau of Customs and Border Protection, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, Non-governmental organizations, U.S. Navy, Campo Kumeyaay Nation, La Posta Band of Mission Indians, Manzanita Band of the Kumeyaay Nation	Acquisition: General, Management: Habitat Maintenance and Manipulation, Management: Identify/Protect Foraging, Breeding and Mig Habitats, Management: Land Use, Management: Planning, Management: Population Monitoring, Other: Administration, Other: Information and Education, Other: Law Enforcement, Other: Regulations, Research: Climate Change, Research: Management Techniques, Research: Population Assessment, Research: Population Surveys	Contract, Internal Administrative, Internal Technical Assistance	Action needs updating. The Jacumba Habitat-Based Occurrence Complex is pretty well protected, however the unit should be expanded to include habitat in the Campo-La Posta area west of the current unit boundaries. Much occupied habitat in these areas is not planned for conservation, nor is there any ongoing coordinated planning effort (East County Draft HCP stalled because of budget constraints). Mostly Tribal or Military ownership that would not be participants in the regional HCP anyway.
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	1	1.7.1.1	Intensive restoration of agricultural and grazed areas or otherwise degraded habitat in the Southwest San Diego Recovery Unit.	Ongoing Not Current	FY 2006		City of Chula Vista, California, City of San Diego, California, San Diego County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game	Management: Habitat Maintenance and Manipulation, Research: Habitat Status, Research: Management Techniques	Contract, Graduate Student, Internal Technical Assistance	Some studies were done in the past; however, we are not aware of any current activities and the vast majority of lands remain unrestored.
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	1	1.7.1.2	Intensive restoration of agricultural areas and degraded habitat in the Southwest Riverside Recovery Unit	Ongoing Not Current	FY 2006		Riverside County, California, City of Murrietta, California, City of Temecula, California, U.S. Fish and Wildlife Service	Management: Habitat Maintenance and Manipulation, Research: Habitat Status, Research: Management Techniques	Contract, Graduate Student, Internal Technical Assistance	We are not aware of any current significant activities.

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Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	1	1.7.2	Remove cattle or sheep and phase in weed control where habitat is currently grazed.	Ongoing Not Current	FY 2000 - FY 2004		City of San Diego, California, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, San Bernardino National Forest	Management: Habitat Maintenance and Manipulation, Management: Land Use, Management: Planning, Research: Habitat Status, Research: Management Techniques	Contract, Graduate Student, Internal Administrative, Internal Technical Assistance	Action may need updating. No weed control has been phased in where cattle were removed, resulting in an increased rate of nonnative plant invasion and habitat degradation (City of San Diego lands in Marron Valley). Some reserach has been conducted but has not resulted in any weed control activities. San Bernardino National Forest has been actively engaged in managing grazing to benefit the subspecies, removal of grazing may not be needed. Status unknown on BLM lands.
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	3	10.1	Survey for habitat and undocumented populations between the South Riverside / North San Diego Recovery Unit and the Southeast San Diego Recovery Unit in eastern San Diego County.	Partially Complete	FY 2000 - FY 2004		San Diego County, California, San Diego State University, San Diego Zoological Society, Project proponents (unspecified) [Quino checkerspot butterfly habitat], U.S. Fish and Wildlife Service, Cleveland National Forest	Research: Population Surveys	Contract, Internal Administrative, Internal Field Assistance	2011 Surveys revealed more occupied areas and the "big picture" of habitat and occupancy distribution is starting to fill in for Central San Diego County.

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Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	3	10.2	Survey for habitat and undocumented populations between State Route 94 and Interstate 8 in southern San Diego County.	Partially Complete	FY 2000 - FY 2004		San Diego County, California, Alpha USA, Inc., Project proponents (unspecified) [Quino checkerspot butterfly habitat], U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, California Department of Fish and Game	Research: Population Surveys	Contract, Internal Administrative, Internal Field Assistance	2009 and 2010 Surveys revealed more occupied areas and the "big picture" of habitat and occupancy distribution is starting to fill in for this area. New observation locations on La Posta and Manzanita Reservations in 2010. Confirmed occupancy in historic location near Barrett Lake (2 years consecutive, multiple individuals).
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	3	10.3	Survey for habitat and undocumented populations in possible future recovery units.	Ongoing Current	FY 2000 - FY 2004		Air Station Miramar, U.S. Marine Corps, City of San Diego, California, Orange County, California, San Diego County, California, Project proponents (unspecified) [Quino checkerspot butterfly habitat], Camp Pendleton, U.S. Marine Corps, U.S. Fish and Wildlife Service	Research: Population Surveys	Contract, Internal Administrative, Internal Field Assistance	
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	3	10.4	Survey for habitat and undocumented populations in the Santa Ana Mountains and foothills.	Ongoing Not Current	FY 2000 - FY 2004		Orange County, California, Riverside County, California, San Diego State University, City of Lake Elsinore, California, U.S. Fish and Wildlife Service, Cleveland National Forest, Irvine Ranch Conservancy	Research: Population Surveys	Contract, Internal Administrative, Internal Field Assistance	Action probably needs updating. We do not believe any undocumented populations exist. No work was done regarding habitat surveys in 2011.

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Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	3	11	Survey areas not otherwise recommended for surveys that fall within the latest recommended survey area map.	Ongoing Not Current	FY 2000 - FY 2004		City of San Diego, California, Orange County, California, Riverside County, California, San Diego County, California, City of Lake Elsinore, California, City of Canyon Lake, California, Anza Borrego Desert State Park, Project proponents (unspecified) [Quino checkerspot butterfly habitat], City of Poway, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, Cleveland National Forest, San Bernardino National Forest, California Department of Fish and Game	Research: Population Surveys	Contract, Internal Administrative, Internal Field Assistance	Project-based surveys continue to be conducted in San Diego County, but they are no longer required by Riverside County because take is covered under the HCP, only Federal Agencies (such as the USFS and BLM) are conducting habitat and population surveys. Privately owned lands north of the community of Anza likely contain occupied habitat that is not documented and needs to be conserved. See 5 year review and revised critical habitat rule.
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	3	12	Enter into dialogue with Baja California, Mexico, nongovernmental organizations and local governments.	Ongoing Not Current	FY 2000 - FY 2004		Mexico, Baja California Norte, Mexico, U.S. Fish and Wildlife Service, Non-governmental organizations	Management: International Cooperation	Labor type not yet selected	
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	1	2	Continue yearly reviews, monitoring as needed as part of adaptive management until there is evidence that populations associated with core occurrence complexes are resilient.	Ongoing Current	FY 2000 - FY 2004		Riverside County, California, San Diego County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game	Management: Population Monitoring	Internal Field Assistance, Volunteer	Monitoring and reviews should be formalized, although qualitative information may provide enough data to make a resilience estimate.

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Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	1	3	Assess and augment lowest density populations as needed to help establish resilience.	Not Started			Riverside County, California, San Diego County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game	Management: Population Monitoring, Research: Habitat Status, Research: Management Techniques, Research: Population Assessment, Research: Propagation	Contract, Internal Administrative, Internal Field Assistance	Riverside County (and CNLM) is monitoring some low density populations for persistence, but only at the population survey level for lands they have access to, nobody is "assessing" population status in the sense of conducting a status analysis or considering augmentation. This is especially needed in the Warm Springs Creek area (City of Murrietta, California).
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	1	4	Establish and maintain a captive propagation program	Ongoing Not Current	FY 2000 - FY 2004		California Department of Transportation, University of California at Riverside, Murrieta Valley Unified School District, U.S. Fish and Wildlife Service	Management: Propagation	Contract, Internal Administrative	There is no guaranteed funding for the captive propagation program, or a plan to provide long-term direction. These activities have stalled. The goals have changed since the recovery plan was drafted, this program is needed more for research and less for refugia. Extant populations may not need augmentation. Reintroduction may be needed in the Lake Matthews and Murrieta areas, but maintenance of captive populations long-term is not required for reintroduction or augmentation if extant populations are dependable and high enough density to provide donor individuals for captive rearing over time.

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Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	2	5.1	Develop and implement the proposed Vista Murrieta High School educational outreach project (Helix 2000), in the Warm Springs Creek / Murrieta area.	Ongoing Not Current	FY 2000 - FY 2004		University of California at Riverside, Murrieta Valley Unified School District, U.S. Fish and Wildlife Service	Other: Information and Education	Internal Administrative, Internal Technical Assistance, Volunteer	Stalled with Rearing program. Insufficient funding. Only work being done is informal and on a volunteer basis by Dr. Pratt from UC Riverside who runs the rearing program on campus, and teachers who are interested.
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	2	5.2	Initiate an educational outreach similar to that proposed for Vista Murrieta High School in the Southwest San Diego Recovery Unit, associated with the San Diego National Wildlife Refuge Complex.	Discontinued	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Non-governmental organizations	Other: Information and Education	Internal Administrative, Internal Technical Assistance, Volunteer	CFWO staff started program working with teacher at Steele Canyon HS. Teacher lost interest, staff work priorities changed, hasn't been renewed, no plans to do so.
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	2	5.3	Initiate further cooperative outreach efforts with local nongovernmental organizations, educational institutions, and local museums.	Ongoing Current	FY 2000 - FY 2004		San Diego State University, San Diego Zoological Society, University of California at Riverside, University of California at Irvine, San Diego Natural History Museum, University of San Diego, University of California, San Diego, U.S. Fish and Wildlife Service, Non-governmental organizations	Other: Information and Education	Internal Administrative, Internal Technical Assistance, Volunteer	No new activities that we are aware of in 2011.

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Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	2	5.4	Initiate an outreach program with local off-road vehicle clubs and organizations to promote mutual understanding and cooperation in furthering conservation of the butterfly.	Ongoing Current	FY 2011		Riverside County, California, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, Non-governmental organizations	Other: Information and Education	Labor type not yet selected	BLM initiated a program through a "Grant program" where they reviewed recommendations made by the USFWS. The funding decision occurred in 2010, however, activities actually were initiated in 2011. BLM staff put up kiosks and made educational material and had booths at OHV-oriented events (e.g. Anda Earth Day Fair). Dr. Gordon Pratt participated as well voluntarily.
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	2	6.1	Survey areas between and around occurrence complexes to determine where there is intervening and/or additional landscape connectivity.	Ongoing Not Current	FY 2000 - FY 2004		Riverside County, California, San Diego County, California, Project proponents (unspecified) [Quino checkerspot butterfly habitat], U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, Cleveland National Forest, San Bernardino National Forest, U.S. Navy, Campo Kumeyaay Nation, La Posta Band of Mission Indians, Manzanita Band of the Kumeyaay Nation	Management: Identify/Protect Foraging, Breeding and Mig Habitats, Research: Population Surveys	Contract, Internal Administrative, Internal Field Assistance	Project-based surveys continue to be conducted in San Diego County, but they are no longer required by Riverside County because take is covered under the HCP, only Federal Agencies (such as the USFS and BLM) are conducting habitat and population surveys. Privately owned lands north of the community of Anza likely contain occupied habitat that is not documented and needs to be conserved. See 5 year review and revised critical habitat rule.

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Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	2	6.2	Map habitat patch distributions associated with occurrence complexes.	Ongoing Not Current	FY 2007		Riverside County, California, San Diego County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game	Management: Identify/Protect Foraging, Breeding and Mig Habitats	Contract, Internal Administrative, Internal Field Assistance	Some of this was done for the 5-Year Review and critical habitat designation. Actions are limited to project-based survey reports; no activity is integrating this information.
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	2	6.3	Monitor ongoing habitat loss and exotic species invasion within mapped critical habitat and occurrence complexes	Not Started	FY 2008		Riverside County, California, San Diego County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game	Management: Population Monitoring, Research: Habitat Status	Contract, Internal Administrative, Internal Field Assistance	
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	2	6.4	Conduct preliminary modeling of metapopulation dynamics for the Southwest Riverside and Southwest San Diego Recovery Unit occurrence complexes	Not Started			Riverside County, California, San Diego County, California, U.S. Fish and Wildlife Service	Research: Demographic Studies	Contract, Graduate Student, Species Expert	
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	2	6.5	Investigate the function of hilltops as a resource for Quino checkerspot butterfly populations	Partially Complete	FY 2000 - FY 2004		Riverside County, California, San Diego County, California, U.S. Fish and Wildlife Service	Research: Habitat Requirements	Contract, Graduate Student, Species Expert	No follow up to Osborne's pilot study yet.
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	2	6.6	Investigate the contribution of multiple year diapause to metapopulation resilience.	Ongoing Not Current	FY 2006		Riverside County, California, San Diego County, California, U.S. Fish and Wildlife Service	Research: Demographic Studies, Research: Habitat Requirements	Contract, Graduate Student, Species Expert	No follow-up on Pratt's pilot study yet.
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	2	6.7	Investigate host plant preference and host related larval development success on a population-by-population basis	Not Started			U.S. Fish and Wildlife Service	Research: Habitat Requirements	Contract, Graduate Student, Species Expert	CFWO proposal to use mitigation funds in process. Pratt planned pilot study, no results yet.

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Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	2	6.8	Determine the effect of elevated atmospheric carbon dioxide and nitrogen fertilization on the Quino checkerspot butterfly and its host plant.	Not Started			U.S. Fish and Wildlife Service	Research: Dietary Studies, Research: Environmental Contaminants, Research: Other Information	Contract, Graduate Student, Species Expert	
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	2	7	Document or reintroduce a population within the Lake Mathews Population Site in the Northwest Riverside Recovery Unit.	Not Started			Lake Mathews/Estelle Mountain Reserve Management Committee, Riverside County, California, U.S. Fish and Wildlife Service	Research: Reintroduction	Contract, Internal Administrative, Internal Field Assistance, Species Expert	Considered extirpated from Gavilan Hills/Lake Mathews area.
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	2	8	Reduce firearm use and unauthorized trash dumping in habitat areas	Ongoing Current	FY 2000 - FY 2004		Riverside County, California, San Diego County, California, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, Non-governmental organizations	Management: Land Use, Other: Information and Education, Other: Law Enforcement, Other: Regulations	Labor type not yet selected	BLM and other agencies are actively managing all activities that affect endangered species; however, nothing has been quantified with regards to progress on this action.
Quino checkerspot butterfly (Euphydryas editha quino (=E. e. wrighti))	2	9	Continue dialogue with the Cahuilla Band of Indians.	Ongoing Current	FY 2000 - FY 2004		Cahuilla Band of Indians, U.S. Fish and Wildlife Service	Management: International Cooperation, Management: Planning, Other: Information and Education	Internal Administrative, Internal Field Assistance, Internal Technical Assistance	Last coordination with this tribe was during critical habitat revision process. Action needs to be updated to include all tribes who are stakeholders. We did not communicate with this tribe regarding Quino in 2011.